

1 **WHAT IS CLAIMED IS:**

2

3 1. A method of processing data carried on a media path
4 between a first network element and a second network
5 element, comprising:

- 6 - receiving a stream of composite packets from the first
7 network element, each composite packet carrying media
8 information and auxiliary information pertaining to
9 the composite packet;
- 10 - generating, on a basis of the media information and
11 the auxiliary information carried in the composite
12 packets, an output media stream free of the auxiliary
13 information carried in the composite packets;
- 14 - releasing the output media stream towards the second
15 network element.

16

17 2. The method defined in claim 1, wherein generating the
18 output media stream comprises:

- 19 - removing the auxiliary information from each composite
20 packet.

21

22 3. The method defined in claim 2, wherein the media
23 information carried in each composite packet comprises
24 compressed media, wherein generating the output media
25 stream further comprises:

- 26 - converting into waveform data the compressed media
27 carried in each composite packet.

28

29 4. The method defined in claim 1, wherein the auxiliary
30 information carried in each composite packet identifies
31 an active speaker associated with the composite packet,
32 wherein generating the output media stream comprises:

- 1 - determining from the auxiliary information carried in
- 2 each composite packet an active speaker associated
- 3 with the composite packet;
- 4 - generating an intermediate media stream for each of a
- 5 plurality of active speakers from the media
- 6 information carried in each of the composite packets
- 7 associated with that active speaker;
- 8 - combining the intermediate media streams into the
- 9 output media stream.
- 10
- 11 5. The method defined in claim 4, wherein the media
- 12 information carried in each composite packet comprises
- 13 compressed media, wherein generating an intermediate
- 14 media stream for a particular active speaker comprises:
- 15 - converting into waveform data the compressed media
- 16 carried in each composite packet associated with the
- 17 particular active speaker.
- 18
- 19 6. The method defined in claim 5, wherein combining the
- 20 intermediate media streams into the output media stream
- 21 comprises:
- 22 - adding the waveform data carried in the intermediate
- 23 media streams to generate the output media stream
- 24 carrying composite waveform data.
- 25
- 26 7. The method defined in claim 6, the method further
- 27 comprising:
- 28 - encoding into compressed media the composite waveform
- 29 data carried in the output media stream.
- 30
- 31 8. The method defined in claim 1, wherein the auxiliary
- 32 information carried in each composite packet identifies a

- 1 codec type associated with the composite packet, wherein
2 generating the output media stream comprises:
- 3 - determining from the auxiliary information carried in
4 each composite packet a codec type associated with the
5 composite packet;
 - 6 - generating an intermediate media stream for each of a
7 plurality of codec types from the media information
8 carried in each of the composite packets associated
9 with that active speaker;
 - 10 - combining the intermediate media streams into the
11 output media stream.
- 12
- 13 9. The method defined in claim 8, wherein the media
14 information carried in each composite packet comprises
15 compressed media, wherein generating an intermediate
16 media stream for a particular codec type comprises:
- 17 - converting into waveform data the compressed media
18 carried in each composite packet associated with the
19 particular codec type.
- 20
- 21 10. The method defined in claim 9, wherein combining the
22 intermediate media streams into the output media stream
23 comprises:
- 24 - adding the waveform data carried in the intermediate
25 media streams to generate the output media stream
26 carrying composite waveform data.
- 27
- 28 11. The method defined in claim 10, the method further
29 comprising:
- 30 - encoding into compressed media the composite waveform
31 data carried in the output media stream.
- 32

1 12. The method defined in claim 1, wherein the media is
2 speech.

3
4 13. The method defined in claim 1, wherein the media is
5 audio.

6
7 14. The method defined in claim 1, wherein the media is
8 still imagery.

9
10 15. The method defined in claim 1, wherein the media is
11 video.

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13 16. The method defined in claim 1, further comprising
14 packetizing the output media stream at a data interface
15 prior to releasing the output media stream towards the
16 second network element.

17
18 17. Apparatus for processing data carried on a media path
19 between a first network element and a second network
20 element, comprising:

21 - means for receiving a stream of composite packets from
22 the first network element, each composite packet
23 carrying media information and auxiliary information
24 pertaining to the composite packet;

25 - means for generating, on a basis of the media
26 information and the auxiliary information carried in
27 the composite packets, an output media stream free of
28 the auxiliary information carried in the composite
29 packets;

30 - means for releasing the output media stream towards
31 the second network element.

32

1 18. An apparatus for processing data carried on a media
2 path between a first network element and a second network
3 element, comprising:

- 4 - a data interface operative to receive a stream of
5 composite packets from the first network element and
6 to release an output media stream towards the second
7 network element, each composite packet carrying media
8 information and auxiliary information pertaining to
9 the composite packet;
- 10 - a processing entity operative to generate, on a basis
11 of the media information and the auxiliary information
12 carried in the composite packets, the output media
13 stream free of the auxiliary information carried in
14 the composite packets.

15

16 19. The apparatus defined in claim 18, wherein the
17 processing entity being operative to generate the output
18 media stream comprises the processing entity being
19 operative to remove the auxiliary information from each
20 composite packet.

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22 20. The apparatus defined in claim 19, wherein the media
23 information carried in each composite packet comprises
24 compressed media, further comprising a decoder operative
25 to decode into waveform data the compressed media carried
26 in each composite packet.

27

28 21. The apparatus defined in claim 18, wherein the
29 auxiliary information carried in each composite packet
30 identifies an active speaker associated with the
31 composite packet, wherein the processing entity being
32 operative to generate the output media stream comprises
33 the processing entity being operative to determine from

1 the auxiliary information carried in each composite
2 packet an active speaker associated with the composite
3 packet and to generate an intermediate media stream for
4 each of a plurality of active speakers from the media
5 information carried in each of the composite packets
6 associated with that active speaker, the apparatus
7 further comprising:

- 8 - a combiner operative to combine the intermediate media
9 streams into the output media stream.

10

11 22. The apparatus defined in claim 21, wherein the media
12 information carried in each composite packet comprises
13 compressed media, further comprising:

- 14 - for each particular active speaker, a decoder
15 operative to decode into waveform data the compressed
16 media carried in each composite packet associated with
17 the particular active speaker.

18

19 23. The apparatus defined in claim 22 wherein the combiner
20 being operative to combine the intermediate media streams
21 into the output media stream comprises the combiner being
22 operative to add the waveform data carried in the
23 intermediate media streams to generate the output media
24 stream carrying composite waveform data.

25

26 24. The apparatus defined in claim 24, further comprising:

- 27 - an encoder operative to encode into compressed media
28 the composite waveform data carried in the output
29 media stream.

30

31 25. The apparatus defined in claim 18, wherein the
32 auxiliary information carried in each composite packet
33 identifies a codec type associated with the composite

1 packet, wherein the processing entity being operative to
2 generate the output media stream comprises the processing
3 entity being operative to determine from the auxiliary
4 information carried in each composite packet a codec type
5 associated with the composite packet and to generate an
6 intermediate media stream for each of a plurality of
7 codec types from the media information carried in each of
8 the composite packets associated with that active
9 speaker, the apparatus further comprising:

- 10 - a combiner operative to combine the intermediate media
11 streams into the output media stream.

12

13 26. The apparatus defined in claim 25, wherein the media
14 information carried in each composite packet comprises
15 compressed media, the apparatus further comprising:

- 16 - for each particular codec type, a decoder operative to
17 decode into waveform data the compressed media carried
18 in each composite packet associated with the
19 particular codec type.

20

21 27. The apparatus defined in claim 26, wherein the
22 combiner being operative to combine the intermediate
23 media streams into the output media stream comprises the
24 combiner being operative to add the waveform data carried
25 in the intermediate media streams to generate the output
26 media stream carrying composite waveform data.

27

28 28. The apparatus defined in claim 27, further comprising:

- 29 - an encoder operative to encode into compressed media
30 the composite waveform data carried in the output
31 media stream.

32

1 29. The apparatus defined in claim 18, the data interface
2 being further operative to packetize the output media
3 stream at a data interface prior to releasing the output
4 media stream towards the second network element.

5
6 30. A computer program product for use with a conference
7 bridge adapter located in a media path between a first
8 data element and a second data element, the computer
9 program product comprising a computer usable medium
10 having computer readable program code thereon, the
11 computer readable program code including:

- 12 - program code for receiving a stream of composite
13 packets from the first network element, each composite
14 packet carrying media information and auxiliary
15 information pertaining to the composite packet;
- 16 - program code for generating, on a basis of the media
17 information and the auxiliary information carried in
18 the composite packets, an output media stream free of
19 the auxiliary information carried in the composite
20 packets;
- 21 - program code for releasing the output media stream
22 towards the second network element.

23

24 31. A method of processing data carried on a media path
25 between a first network element and a second network
26 element, comprising:

- 27 - receiving a stream of packets from the first network
28 element, each received packet carrying media
29 information;
- 30 - deriving from the media information carried in each
31 received packet auxiliary information pertaining to
32 the received packet;

- 1 - generating a stream of composite packets, each said
- 2 composite packet being produced from the media
- 3 information carried in a respective received packet
- 4 and the auxiliary information pertaining to the
- 5 respective received packet;
- 6 - releasing the stream of composite packets towards the
- 7 second network element.

8

9 32. The method defined in claim 31, wherein deriving from
10 the media information in each received packet the
11 auxiliary information pertaining to the received packet
12 comprises:

- 13 - determining an identity of an end user device from
- 14 which the received packet originates.

15

16 33. The method defined in claim 32, wherein the media
17 information carried in each received packet comprises
18 compressed media, the method further comprising:

- 19 - producing each composite packet by associating to the
- 20 compressed media carried in a respective received
- 21 packet the auxiliary information pertaining to the
- 22 respective received packet.

23

24 34. The method defined in claim 33, wherein deriving from
25 the media information in each received packet the
26 auxiliary information pertaining to the received packet
27 comprises:

- 28 - converting into waveform data the compressed media
- 29 carried in the received packet;
- 30 - identifying at least one feature of the waveform data.

31

1 35. The method defined in claim 34, wherein the at least
2 one feature includes information useful by a conference
3 bridge in making an active talker selection.
4

5 36. The method defined in claim 35, wherein the at least
6 one feature includes a signal power of the waveform data.
7

8 37. The method defined in claim 33, wherein deriving from
9 the media information in each received packet the
10 auxiliary information pertaining to the received packet
11 comprises:

12 - determining an identity of an end user device from
13 which the received packet originates.
14

15 38. The method defined in claim 31, wherein the media
16 information carried in each received packet comprises
17 waveform data, wherein deriving from the media
18 information in each received packet the auxiliary
19 information pertaining to the received packet comprises
20 encoding into compressed media the waveform data carried
21 in the received packet, the method further comprising:

22 - producing each composite packet by associating to the
23 compressed media encoded from the waveform data
24 carried in a respective received packet the auxiliary
25 information pertaining to the respective received
26 packet.
27

28 39. The method defined in claim 38, wherein deriving from
29 the media information in each received packet the
30 auxiliary information pertaining to the received packet
31 comprises:

32 - identifying at least one feature of the waveform data
33 carried in each packet.

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2 40. The method defined in claim 39, wherein the at least
3 one feature includes information useful by a conference
4 bridge in making an active talker selection.

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6 41. The method defined in claim 40, wherein the at least
7 one feature includes a signal power of the waveform data.

8

9 42. The method defined in claim 38, wherein deriving from
10 the media information in each received packet the
11 auxiliary information pertaining to the received packet
12 comprises:

13 - determining an identity of an end user device from
14 which the received packet originates.

15

16 43. The method defined in claim 31, wherein the media is
17 speech.

18

19 44. The method defined in claim 31, wherein the media is
20 audio.

21

22 45. The method defined in claim 31, wherein the media is
23 still imagery.

24

25 46. The method defined in claim 31, wherein the media is
26 video.

27

28 47. Apparatus for processing data carried on a media path
29 between a first network element and a second network
30 element, comprising:

31 - means for receiving a stream of packets from the first
32 network element, each received packet carrying media
33 information;

- 1 - means for deriving from the media information carried
- 2 in each received packet auxiliary information
- 3 pertaining to the received packet;
- 4 - means for generating a stream of composite packets,
- 5 each said composite packet being produced from the
- 6 media information carried in a respective received
- 7 packet and the auxiliary information pertaining to the
- 8 respective received packet;
- 9 - means for releasing the stream of composite packets
- 10 towards the second network element.

11

12 48. Apparatus for processing data carried on a media path
13 between a first network element and a second network
14 element, comprising:

- 15 - a data interface operative to receive a stream of
- 16 packets from the first network element and to release
- 17 a stream of composite packets towards the second
- 18 network element, each received packet carrying media
- 19 information;
- 20 - a processing entity operative to derive from the media
- 21 information carried in each received packet auxiliary
- 22 information pertaining to the received packet;
- 23 - a combiner operative to produce each composite packet
- 24 by combining the media information carried in a
- 25 respective received packet and the auxiliary
- 26 information pertaining to the respective received
- 27 packet.

28

29 49. The apparatus defined in claim 48, wherein the media
30 information carried in each received packet comprises
31 compressed media, wherein the combiner being operative to
32 produce each composite packet comprises the combiner
33 being operative to associate to the compressed media

1 carried in the respective received packet the auxiliary
2 information pertaining to the respective received packet.

3

4 50. The apparatus defined in claim 49, wherein the
5 processing entity comprises:

- 6 - a decoder operative to decode into waveform data the
- 7 compressed media carried in the received packet; and
- 8 - a feature extractor operative to identify at least one
- 9 feature of the waveform data.

10

11 51. The apparatus defined in claim 50, wherein the at
12 least one feature includes information useful by a
13 conference bridge in making an active talker selection.

14

15 52. The apparatus defined in claim 51, wherein the feature
16 extractor is a signal power measurement unit operative to
17 measure a signal power of the waveform data.

18

19 53. The apparatus defined in claim 52, wherein the media
20 information carried in each received packet comprises
21 waveform data, wherein the processing entity comprises an
22 encoder operative to encode into compressed media the
23 waveform data carried in the received packet, wherein the
24 combiner being operative to produce each composite packet
25 comprises the combiner being operative to associate to
26 the compressed media encoded from the waveform data
27 carried in the respective received packet the auxiliary
28 information pertaining to the respective received packet.

29

30 54. The apparatus defined in claim 53, wherein the
31 processing entity comprises:

- 32 - a feature extractor operative to identify at least one
- 33 feature of the waveform data carried in each packet.

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2 55. The apparatus defined in claim 54, wherein the at
3 least one feature includes information useful by a
4 conference bridge in making an active talker selection.

5

6 56. The apparatus defined in claim 55, wherein the feature
7 extractor is a signal power measurement unit operative to
8 measure a signal power of the waveform data.

9

10 57. A computer program product for use with a conference
11 bridge adapter located in a media path between a first
12 data element and a second data element, the computer
13 program product comprising a computer usable medium
14 having computer readable program code thereon, the
15 computer readable program code including:

- 16 - program code for receiving a stream of packets from
17 the first network element, each received packet
18 carrying media information;
- 19 - program code for deriving from the media information
20 carried in each received packet auxiliary information
21 pertaining to the received packet;
- 22 - program code for generating a stream of composite
23 packets, each said composite packet being produced
24 from the media information carried in a respective
25 received packet and the auxiliary information
26 pertaining to the respective received packet;
- 27 - program code for releasing the stream of composite
28 packets towards the second network element.

29

30 58. A method of establishing a media conference linking a
31 plurality of endpoints via a conference bridge adapted to
32 exchange composite packets carrying media information in

1 conjunction with auxiliary information pertaining to the
2 media information, comprising:

- 3 a) determining whether one or more of the endpoints is
4 characterized by an inability to exchange composite
5 packets with the conference bridge;
- 6 b) for at least one endpoint identified at a), routing
7 the media path from said endpoint via an adapter that
8 is capable of exchanging composite packets with the
9 conference bridge.

10
11 59. A teleconferencing network, comprising:

- 12 - a conference bridge operative to communicate composite
13 packets carrying media information in conjunction with
14 auxiliary information pertaining to the media
15 information;
- 16 - a plurality of conference endpoints, at least one of
17 which is characterized by an inability to exchange the
18 composite packets with the conference bridge;
- 19 - a bridge adapter located between the conference bridge
20 and at least one endpoint characterized by an
21 inability to exchange composite packets with the
22 conference bridge, the adapter being operative to
23 exchange composite packets with the conference bridge
24 and to exchange media information with said at least
25 one endpoint.

26
27 60. The teleconferencing network defined in claim 59,
28 wherein at least one endpoint characterized by an
29 inability to exchange composite packets with the
30 conference bridge is an IP phone.